

REMARKS

This response is submitted in response to an Office Action mailed on August 29, 2006.

Claims 1-69 were pending at the time the Office Action was issued, with claims 23-69 having previously been withdrawn from consideration. The Office Action, however, notes that claims 23-67 previously were withdrawn. Applicants have amended claims 1 and 3. No claims have been canceled, nor have any further claims been withdrawn. Thus, Claims 1-22 are presented for reconsideration.

In the Office Action dated August 29, 2006, claim 3 was objected to; claims 1-22 were rejected under 35 U.S.C. § 112, second paragraph; claims 1-5, 11-13, 16, and 18-22 were rejected under 35 U.S.C. § 102(e); and claims 6-10 and 14 were rejected under 35 U.S.C. § 103(a) (two different rejections). Claims 15 and 15 were indicated as containing allowable subject matter. Applicants request reconsideration of the objections and rejections set forth in the Office Action.

Claim Objection

Claim 3 was objected to for failing to further limit the subject matter of the previous claim. Claim 3 has been amended to further limit the subject matter of claim 1 from which claim 3 directly depends. Therefore, Applicants request reconsideration and withdrawal of the objection of claim 3.

35 U.S.C. § 112, Second Paragraph

Claims 1-22 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject

1 matter which Applicant regards as the invention. Specifically, the Office Action
2 asserted that the phrase “configured to be at least partially supported” recited in
3 claim 1 was not clear. Applicants have amended claim 1 so that claims 1-22
4 particularly point out and distinctly claim the subject matter which Applicant
5 regards as the invention. Accordingly, Applicants request reconsideration and
6 withdrawal of the rejection of claims 1-22 under 35 U.S.C. § 112, second
7 paragraph.

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9 *35 U.S.C. § 102(e)*

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11 **REJECTIONS UNDER 35 U.S.C. § 102**

12 Claims 1-22 were pending at the time the Office Action was issued. Claims
13 1-5 and 18-22 were rejected under 35 U.S.C. § 102(b) as having been anticipated
14 by U.S. Patent No. 5,971,247 to Gentry (hereinafter “Gentry”). Claims 1-7, 9, 11,
15 and 14-20 were rejected under 35 U.S.C. § 102(b) as having been anticipated by
16 U.S. Patent No. 4,304,512 to Vierstraete (hereinafter “Vierstraete”). Claims 1-5
17 and 9-22 were rejected under 35 U.S.C. § 102(b) as having been anticipated by
18 U.S. Patent No. 2,665,362 to Darner et al. (hereinafter “Darner”). Claims 1-7 and
19 20-22 were rejected under 35 U.S.C. § 102(b) as having been anticipated by
20 German Patent No. DE 3,404,555 to Rudolph (hereinafter “Rudolph”). Claims 1-
21 10, 20, and 22, were rejected under 35 U.S.C. § 102(e) as having been anticipated
22 by U.S. Patent Publication No. 2004/0120783 A1 of Alber (hereinafter “Alber”).
23 Finally, claims 1-5, 14, and 20 were rejected under 35 U.S.C. § 102(e) as having
24 been anticipated by U.S. Patent Publication No. 2002/0162876 to Aota et al.
25 (hereinafter “Aota”).

1 Respectfully, applicants traverse the rejections, and submit that the claims
2 are allowable over the references cited for the reasons explained in detail below.

3 In the interest of reducing the issues to be considered in this response, the
4 following remarks focus principally on the patentability of independent claim 1.
5 The patentability of each of the dependent claims is not necessarily separately
6 addressed in detail. However, applicants' decision not to discuss the differences
7 between the cited art and each dependent claim should not be considered as an
8 admission that applicants concur with the conclusions set forth in the Office
9 Action that these dependent claims are not patentable over the disclosure in the
10 cited references. Similarly, applicants' decision not to discuss differences between
11 the prior art and every claim element, or every comment set forth in the Office
12 Action, should not be considered as an admission that applicants concur with the
13 interpretation and assertions presented in the Office Action regarding those claims.
14 Indeed, applicants believe that all of the dependent claims patentably distinguish
15 over the references cited. Moreover, a specific traverse of the rejection of each
16 dependent claim is not required, since dependent claims are patentable for at least
17 the same reasons as the independent claims from which the dependent claims
18 ultimately depend.

19 Applicants respectfully assert that claim 1, as amended, is patentable over
20 each of the references cited. None of the references cited as having anticipated
21 claim 1 recites each of the elements recited by claim 1 as amended. For
22 convenience, claim 1, as amended, is reproduced here:
23
24
25

1 1. (Currently Amended) A clamp for securing a work piece
2 during a manufacturing operation, comprising:

3 a support arranged to at least partially surround a
4 circumference defining a work area on the work piece,
5 the support having a first end movable relative to a
6 surface of the work piece; and

7 at least one rotatable friction reducing element disposed at
8 ~~attached to the first end~~ and configured to be at least
9 ~~partially supported at the first end by one of a fluid~~
10 ~~pressure and a gas pressure adapted to facilitate a~~
11 ~~rotation of the friction reducing element~~ and disposed
12 between the support and the work piece, the friction
13 reducing element adapted to at least partially surround
14 the circumference and to apply a clamping pressure to
15 the surface when the clamp is engaged with the work
16 piece and moved across the work piece.

17 The “at least one rotatable friction reducing element disposed at the first end and
18 configured to be at least partially supported at the first end by one of a fluid
19 pressure and a gas pressure adapted to facilitate a rotation of the friction reducing
20 element” is not disclosed by and, thus, not anticipated by, any of the cited
21 references.

22 Respectfully, applicants wish to reiterate that claim 1, as amended, recites
23 that it is the friction reducing element that is “configured to be at least partially
24 supported at the first end by one of a fluid pressure and a gas pressure adapted to
25 facilitate a rotation of the friction reducing element.” Thus, hydraulics or other
26 sources of fluid or gas pressure contemplated by the cited references to apply
27 pressure to a tool or a material do not anticipate a pressure “adapted to facilitate a
28 rotation of the friction reducing element” as recited by claim 1, as amended.

29 Gentry fails to disclose each and every element recited by claim 1 as
30 amended. Gentry describes a stir welding tool equipped with, as expressly stated
31 in the title, “ROLLER STOPS FOR CONTROLLING WELD DEPTH.” The
32 Office Action relies on Figures 1a and 1b as disclosing “friction reducing

1 elements.” The friction reducing elements disclosed include “a set 20 of a
2 plurality, illustrated as two, of *rollers 20a and 20b, which are supported by and,*
3 *and rotate about, shafts 20as and 20bs*” (Gentry, Column 3, Lines 17-19;
4 emphasis added). Because Gentry discloses rollers that rotate about shafts, Gentry
5 fails to disclose “at least one rotatable friction reducing element disposed at the
6 first end and configured to be at least partially supported at the first end by one of
7 a fluid pressure and a gas pressure adapted to facilitate a rotation of the friction
8 reducing element, Gentry fails to anticipate claim 1 as amended.

9 Vierstraete also fails to disclose each and every element recited by claim 1
10 as amended. Vierstraete, like Gentry, a “milling cutter” equipped with rollers
11 mounted on a pair of rods extending from a ring disposed around the milling
12 cutter:

13 This ring 10 is integral with at least two *posts 17*, of outer
14 square section, located at an angle of 180 degree. from each other
15 and on an axis 18 passing through the axis of rotation 16 and
16 perpendicular to the latter, *these two posts are bored out in order to*
17 *receive two rods 19 with shoulders, bearing on compression*
18 *washers 20 limited in their lower travel by the circlip 42, each*
19 *perpendicular extension of these two rod receives, on the axis 41, a*
20 *roller 21* through the intermediary of bearings 22 retained by circlips
21 23, the alignment, with respect to the axis 18, of these compression
22 blocks is ensured by two plates 24, 25, each secured by screws 26 to
23 the two posts 17.

24 (Vierstraete, Column 2, Lines 42-54; emphasis added). Because Vierstraete
25 describes rollers that rotate about a shaft, Vierstraete fails to disclose “at least one
rotatable friction reducing element disposed at the first end and configured to be at
least partially supported at the first end by one of a fluid pressure and a gas
pressure adapted to facilitate a rotation of the friction reducing element,”
Vierstraete fails to anticipate claim 1 as amended.

Darner similarly fails to disclose each and every element recited by claim 1

1 as amended. The Office Action states that Darner describes a friction-reducing
2 element that “comprises a self-lubricating steel ball and roller bearings held by
3 fluid pressure,” citing Darner at Column 6, Line 40, through Column 7, Line 30,
4 and Column 16, Line 66, through Column 17, Line 27. Respectfully, however,
5 Darner does not disclose what is recited by claim 1 as amended.

6 The passage of Darner relied upon by the Office Action at Column 6, Line
7 40, through Column 7, Line 30, describes “pairs of movable devices such as balls,
8 rollers or the like, for example the pairs of laterally spaced rollers” (Column 6,
9 Lines 51-53) depicted in Figure 1B of Darner. As is clearly shown in Figure 1B,
10 and literally described in the text, each of the rollers “has a stub shaft 58 on which
11 it is carried and which is journaled for free rotation in bearings.” (Darner,
12 Column 6, Lines 63-65). Clearly, Darner fails to disclose “at least one rotatable
13 friction reducing element disposed at the first end and configured to be at least
14 partially supported at the first end by one of a fluid pressure and a gas pressure
15 adapted to facilitate a rotation of the friction reducing element.” Similarly, the
16 passage relied upon by the Office Action at Column 16, Line 66, through Column
17 17, Line 27, describes rollers, mounted on bearings, as previously described.
18 Accordingly, Darner also fails to recite what is recited by claim 1, as amended.

19 In the interest of completeness, applicants wish to note that one of these
20 cited passages of Darner, at Column 6, Line 72, through Column 7, Line 27, does
21 describe a fluid- or gas-pressured device. However, scrutiny of this passage
22 reveals that the fluid- or gas-pressured device described is in the nature of a
23 reciprocating cylinder for pushing a pipe blank *across* the previously described
24 rollers:
25

1 As further shown in Figs. 1-B, 2-B, 3, 4 and 5, *a slide or*
2 *cross head 66 is arranged to slide in ways 67, 68 extending*
3 *longitudinally of the pipe path* and below the latter. The cross head
4 66 carries a bracket 69 having pivoted to it, on a horizontal axis, a
5 pusher arm 70 which may have a hook-like shape as shown and
6 which is adapted to engage the trailing end 71 of the pipe blank 44 at
7 the lowermost locality of such edge. *The cross head 66 is also*
8 *secured at the end of a piston rod 73 which extends to a piston 74*
9 *(Figs. 25, 26, and 27) reciprocable in a cylinder 76 which may be*
10 *actuated by suitable fluid and is preferably of a double-acting type*
11 *controllable to drive the piston rod positively in each direction,*
12 *longitudinally of the pipe path 17. . . .*

13 [D]isplacement of the piston rod 73 from its outermost
14 position . . . thereby *pushes the pipe blank along the rollers*

15 (Darner, Column 6, Line 72, through Column 7, Line 36; emphasis added). Thus,
16 although Darner mentions using a fluid- or gas-pressured device, it is for pushing
17 the pipe blank transversely across the rollers, *not* for promoting the operation of
18 the rollers themselves, or “to facilitate a rotation of the friction reducing element”
19 as recited in claim 1, as amended.

20 Rudolph also fails to disclose each and every element recited by claim 1 as
21 amended. Although Rudolph uses a lubricant in the nature of a “cutting fluid,”
22 Rudolph fails to disclose “at least one rotatable friction reducing element disposed
23 at the first end and configured to be at least partially supported at the first end by
24 one of a fluid pressure and a gas pressure adapted to facilitate a rotation of the
25 friction reducing element.” Accordingly, Rudolph fails to disclose what is recited
by claim 1, as amended.

Alber similarly fails to disclose each and every element as recited by claim
1 as amended. The Office Action cites Figure 3 and Paragraphs 20-23 of Alber for
support that Alber discloses “the friction reducing element applying a clamping
pressure to the surface of the work.” (Office Action, Page 5, Paragraph 1).
However, one should note at least two distinctions between what is described by

1 Alber and what is recited by claim 1 as amended. First, the opening paragraph of
2 Alber, like the paragraph describing Figure 3, makes clear that Alber concerns “a
3 point of separation . . . as an interface between a workpiece support system or tool
4 support system *and* a machine tool spindle” (Alber, Paragraph 0001; emphasis
5 added; *see also* Paragraph 0057, describing Figure 3). Thus, the lubricated point of
6 separation described by Alber is on surfaces between a rotating spindle, such as a
7 friction stir tool and a housing surrounding that tool, *not* between the workpiece
8 support system or tool support system *and* the workpiece itself. Second, and as
9 noted by the Office Action, Alber describes disposing a “solid lubricant” coating,
10 such as MoS₂ on these surfaces at the point of separation. With these two
11 distinctions in mind, it is clear that Alber fails to disclose “at least one rotatable
12 friction reducing element disposed at the first end and configured to be at least
13 partially supported at the first end by one of a fluid pressure and a gas pressure
14 adapted to facilitate a rotation of the friction reducing element” as recited by claim
15 1 as amended. Thus, Alber fails to anticipate claim 1 as amended.

16 Finally, Aota also fails to disclose each and every element as recited by
17 claim 1 as amended. Aota describes, as noted by the Office Action, movable work
18 supports that roll over materials being worked on from above and below. (*See*
19 Aota, Paragraphs 76-83). The work supports include “plural rollers.” However,
20 nothing within the cited passages of Aota, or any other portion of the reference,
21 disclose “at least one rotatable friction reducing element disposed at the first end
22 and configured to be at least partially supported at the first end by one of a fluid
23 pressure and a gas pressure adapted to facilitate a rotation of the friction reducing
24 element.” Accordingly, Aota, like the other references cited, fails to anticipate
25 what is recited by claim 1 as amended.

1 Claims 2-22 depend from and add additional limitations to claim 1.
2 Accordingly, these dependent claims are patentable for at least the same reasons as
3 the claims from which each of them depends.
4


5 CONCLUSION

6 Applicants respectfully submit that Claims 1-22 are in condition for
7 allowance. Applicants respectfully request entry of the amendment, as well as
8 consideration and prompt allowance of the claims. If any issue remains
9 unresolved that would prevent allowance of this case, the Examiner is requested to
10 contact the undersigned attorney to resolve the issue.
11

12 Respectfully Submitted,

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By: _____


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